

river where the water was clear and practically free from vegetation, the bottom being sandy.

Dr. Hora (1935) records in a footnote 'Darna is a tributary of the Godavari river. Annandale [*Rec. Ind. Mus.* (1919) pp. 109-161,] in his account of the fauna of certain small streams in the Bombay Presidency, made observations on the collections made at Medha in Satara District and Khandala in Poona District. Both these places are far away from the Godavari drainage basin. The new species would thus appear to have a somewhat localised distribution.' The occurrence of *Rasbora labiosa* Mukerji, at Baroda shows, however, that the species does not have a localised distribution as stated by Hora.

The specimens were caught with an ordinary rectangular drag net. The biggest specimen measured 75 mm. It is quite likely that the place of capture may be a normal habitat of the fish, as smaller specimens of 30 mm. were also obtained in the same area. The collected specimens resemble closely the illustration given by Hora and Mukerji (1935) except for a slight variation in coloration. The broad black band along the middle of the body, from the angle of the opercles to the root of the tail, described by them was, in our specimens, found to arise from the tip of the snout and extend to the middle of the caudal fin. The other characters resemble the type specimen.

Hora and Mukerji (1935) referred to the hypertrophied condition of the lip as follows. 'Among the functions assigned to the hypertrophied lip in the tadpoles, there is that of buoyancy, for the tadpoles are supposed to use it to hang from the surface film. It is quite possible that the new species, which are essentially surface fishes, also use their expanded lip for the mechanical process of suspending themselves, from the surface of the film, when the water in their habitat becomes foul for ordinary process of respiration'. Our specimens were secured, however, from pools with clear water and without much vegetation, where the specialisation of a hypertrophied lip was of little practical use for suspension.

TARAPOREVALA MARINE BIOLOGICAL STATION,
BOMBAY,

M. R. RANADE, M.Sc.

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18. GROWTH OF CATLA IN TANKS

(With a photo)

Catla is one of our most important fishes for development of pisciculture and is noted for the large size it attains. There is, however, a serious lack of data on its extreme variability in the rate of growth under different ecological conditions and the age of large specimens, viz. above 20 lb. in weight, which are not ordinarily fattened in fish

farms. An opportunity to record such data was, however, available recently and the findings are given below:—

Pashan tank, a sheet of water of about 160 acres in area at F.S.L. and about six miles away from Poona, was stocked by the Department of Fisheries, Bombay. Fry imported from Calcutta in July 1947, was fattened in nursery ponds, and fingerlings about 5 in. long were released in this tank on October 15th, 1947. Observations at intervals of about six months indicated that the fish were thriving satisfactorily. On September 10th, 1951, a number of Rohu, Catla and Mrigal were captured when they attempted to escape through the overflow gates. Catla was the largest of all and measured 3 ft.



in standard length and weighed 55 lb. This weight is, thus, an unmistakable record of growth of a four year old Catla as seen from the accompanying photograph and represents maximum recorded size of known age.

Sundara Raj (1922) states that in large reservoirs Catla attains 3 to 3½ ft. length and 30 to 40 lb. weight in 2½ to 3 years. Chacko (1948) records 'a growth of 3½ to 4 ft. and 30 to 50 lb. within 3 years, 'from the Willingdon Reservoir at South Arcot, Madras. The ecological conditions in these different sheets of water may be different, nevertheless, if the records are put together they indicate another feature, viz., retardation of rate of growth in later years.

This retardation of growth is also represented in fish from the Powai lake where a specimen of 55 lb. was caught on rod and line

by one Mr. J. Muir of the Bombay Provincial Angling Association. The Powai lake was stocked in July 1937, and the 55 pounder was caught in October 1949. This shows that the aforesaid Catla was about 12 years old, no smaller specimens having been captured during the past four years to indicate breeding of the fish in the lake. Another eight Catla which died in the lake for unknown reasons (probably fatty degeneration) in 1949, were also of about the same weight. A 62-lb. Catla was also reported from the same lake but reliable details were not available.

It is well-known that growth of carps varies considerably according to the amount of food and other ecological conditions obtainable in ponds. Nevertheless, the data available on the rate of growth of Catla indicate that it grows fastest in the first three years and thereafter growth slows down. This observation is supported by reports on the growth of the fish in early years. Sundara Raj (op. cit.) records a growth of a foot in six months, 18" to 2 ft. in the first year and 3 to 3½ ft. in 2½ to 3 years. In a pond near Bombay (at Kurla) Catla grew to 8 lb. in one year. Similarly, in a well-manured nursery pond at Bandra the same fish had grown to 12" in total length and 1 lb. 2 oz. in weight in just 2½ months during the monsoon in 1949. The same species, however, in an adjoining stocking tank at Bandra recorded a growth of 24" in 18 months and 30" (17 lb.) in 3 years and 10 months. In other ponds it attained only about 4 lb. in a year. It has also been observed that in one of the ponds in Bombay where ecological conditions were unsuitable for fattening, Catla remained stunted, hardly attaining 5 lb. in three years. Basu (1950) states that in sewage irrigated ponds near Calcutta, 1 cm. fry of Catla attains a length of 40 cm. and weighs 1¼ lb. in the course of one year, while Chacko (1948) records a growth of 9 lb. in one year in Madras ponds and ¼ to 2½ lb. in eight months in Vizagapatam ponds. Mitra (1942) also reports considerable variation in the growth of Catla in the ponds in Orissa, but his figures are not published.

It will thus be evident that though Catla is one of our most promising fishes for development of pisciculture, unfortunately, the rate of its growth manifests an extremely wide range of diversity, depending largely on the ecological conditions of individual tanks. This opinion is strengthened by careful records taken of Catla in tanks in widely separated areas. In fact, study of the fish under controlled conditions can yield a wealth of data, specially if the amount and variety of food available in different tanks are properly recorded.

DEPARTMENT OF FISHERIES,
GOVT. OF BOMBAY,
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C. V. KULKARNI

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